Contribution ID: **849** Type: **Talk**

Running Experience and Performance of the Novel Time of Propagation (TOP) Barrel PID Detector in the Belle II Experiment

Thursday 30 July 2020 08:45 (15 minutes)

The Time of Propagation (TOP) detector is a novel particle identification system developed for the barrel region of the Belle II detector at the SuperKEKB collider at KEK in Tsukuba, Japan. Cherenkov photons generated by charged particles traversing its quartz radiator are captured due to total internal reflection. The Cherenkov emission angle is then reconstructed from the propagation time of individual photons to the Micro-Channel Plate PMT sensor plane mounted at one end of the bar. The readout electronics for the 8192 channels of the TOP system are built around a switched capacitor array waveform sampling ASIC operating at 2.7 GSa/s. Realtime processing in the front end electronics extracts the individual timing of detected photons to better than 100 ps.

This talk presents the current experiences and results from commissioning, calibration and operation of the Belle II TOP detector in the first physics runs of the Belle II experiment up until the summer 2020.

Secondary track (number)

Author: Dr HARTBRICH, Oskar (University of Hawaii at Manoa)

Presenter: Dr HARTBRICH, Oskar (University of Hawaii at Manoa)

Session Classification: Operation, Performance and Upgrade of Present Detectors

Track Classification: 12. Operation, Performance and Upgrade of Present Detectors